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ABSTRACT

The effectiveness of Mississippi's policy of offering incentives to promote workplace training was examined through phone surveys of a sample of 101 of Mississippi's 2,617 manufacturing firms with 100-350 employees (47 of the 77 plants that have used Mississippi incentive programs and 54 plants that have not) and in-depth case studies of 4 plants. The study used a case-control approach and had a 97% response rate. Only 66% of firms not using state incentive programs reported having workers who lack basic skills, whereas 87% of firms using the incentives reported employing workers lacking basic skills. Seventy percent of the firms surveyed did not provide workplace education without state assistance even though 55% believed that all workers must be proficient in basic skills. Plants using state programs were more likely to report an increase in skills demands and attribute the change to new technology, changes in workplace organization, or increased quality standards. In many cases, plants knew nothing about Mississippi's workplace education policies. It was recommended that Mississippi's policymakers be more strategic in their thinking regarding policy design and recognize that plants that are under no immediate pressure to upgrade workers' skills are unlikely to respond to incentive programs. (Contains 54 references.) (MN)

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Policy Off Center: Lessons from Mississippi's Effort to Offer State Incentives to Promote Workplace Education

Paper Presented at the Annual Meeting of the American Educational Research Association

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Abstract

Through phone surveys of 101 Mississippi manufacturing firms and in-depth case studies of four plants, I explore the power and limitations of state incentives to influence the training practices within these firms. In the paper, I compare the characteristics of private manufacturing firms which, supported by state programs, provide workplace education to those that do not. In many instances, plants in this study knew nothing about state workplace education policies, thus rendering such policies an insignificant external factor. My research findings suggest that policy makers must be more strategic in thinking about policy design, recognizing its limits as not all plants respond to state incentives with the same fervor. In firms where work is low skilled and no external pressures require immediate change, policy will be unlikely to alter the plant behavior. Where internal operations are changing and a plant faces great external pressures, policy can provide useful encouragement and assistance.

I. Introduction

Until recently, a production worker who could not read could do his or her job proficiently and earn a livable wage. Today that same production worker's inability to read or perform basic mathematical computations can interfere with a firm's productivity and can negatively affect the wages the worker receives. Although the world market has changed through increased national and international competition and rapid changes in production and information technologies, many U.S. firms continue to show little interest in providing basic skill training. Although there is growing academic and legislative consensus on the importance of strong basic skills, many firms continue to follow old practices which underutilize human capital. By 1989, the failure of plants to invest in the human capital of their workers through training programs had led forty-four states to attempt to influence training practices (Office of Technology Assessment, 1990, p. 44). Little scholarly work has attempted to understand the response of firms to these incentives. This study seeks to understand the relationship between state policy and choices plants make regarding training.

In order to better target public resources, policy makers interested in helping workers command higher standards of living must develop a clearer understanding of employer efforts to enhance human capital. This study generates a deeper understanding of the circumstances and conditions under which firms do or do not respond to policy.

This study used both quantitative and qualitative methods to identify and compare the characteristics of private manufacturing firms which provide workplace education with the support of state programs to those that do not provide workplace education, in one state. I chose Mississippi because (a) its adult workforce is one of the most poorly educated in the nation, (b) the

state was the first to offer plants tax credits and other incentives for investing in workplace education and (c) state officials expressed interest in knowing how Mississippi's policies influenced firms' decisions to invest in basic skill training.[1] Since most previous research examines larger firms, my research focuses on small and medium-sized firms that had been targeted by state incentives programs to increase workplace education. The term "workplace education" describes formal education programs for workers in any or all of the following areas: reading, writing, mathematics, English as a second language, problem solving, and interpersonal skills (Bassi, 1992). This term does not encompass specific job skill training.

This study focuses on the response to two Mississippi programs developed in the late 1980s to support private firms interested in workplace education. The 1980s and 1990s marked an awakening both in Mississippi and in the U.S. around worker education motivated in part by the economic decline of the nation and concern for global competitiveness. In the late 1980s, Mississippi's Special Task Force for Economic Planning and Development clearly recognized the importance of education and training and reported, "Businesses are going to have to commit themselves to continuous investments in delivering quality goods and services, and in training their people" (p.4). The report also called for the state to invest in its greatest economic asset, its people.

A state-wide literacy survey conducted in 1989 demonstrated that much of Mississippi's adult population performed below a 9th grade level. This assessment heightened state concern about the ability of Mississippi industry

[1] According to the 1990 census, 15.6% of Mississippi adults ages 25 and over achieved less than a 9th grade education; another 20.1% completed some high school without obtaining diplomas. The 1990 Mississippi Literacy Assessment found that 700,000 adult Mississippians, ages 16-75, have difficulty searching for specific information, interrelating ideas, or learning from specialized reading materials such as manuals.

to compete in national and international markets and the ability of the state to attract additional industry.

In 1990, the Governor's Commission on Work Force Excellence declared that "state government must fashion policies to increase the State's economic competitiveness and increase opportunities for the existing and potential workforce." The Commission's report, The Quality Equation: High Skills (Equity) = Economic Development, found lacking "a coherent set of policies and procedures that would enable small and medium sized firms to make better use of [available state programs]." The report also identified some strengths entitled "Solutions in Progress."

This study examines two of the proposed "solutions," the Basic Skills Tax Credit (BSTC) and the Skills Enhancement Program (SEP) developed in the late 1980s to support private firms interested in workplace education. Mississippi offers technical and financial assistance to a firm if it makes a commitment to providing workplace education for production workers. The Basic Skills Tax Credit and the Basic Skills Enhancement Program were intended to catalyze firms previously uninvolved in workplace education. The Mississippi Basic Skills Tax Credit reimburses firms for up to fifty percent of their expenditures on training by allowing firms to deduct the training costs from their state taxes. The Mississippi Skills Enhancement Program offers direct technical assistance through the community college system to assess training needs, develop curriculum materials and facilitate appropriate training.

By conducting a phone survey of Mississippi manufacturing firms and through in-depth case studies of four firms, I answer the following questions: (1) What are the common characteristics of firms that have utilized the tax credit and skills enhancement program since they began? (2) Do the firms

that participate in state training programs differ from the firms that do not participate and do not provide any workplace education?

In my analysis of a company's proclivity to train workers, I consider both "internal" and "external" features. By internal features, I mean the organization of work, use of technology, and management style of firms. By external features, I mean company links with suppliers, customers and parent companies and to market forces. I also think of policy incentives as an external feature.

The common assumption behind much policy is that state incentives can affect the internal features of companies. That is, policy makers assume that with proper incentives they can convince owners and managers of the importance of worker training, and that these investments will enhance worker productivity. My study, however, demonstrates that it is insufficient to consider only the relationship between state incentives and firm's internal features. Rather, I argue that external features best predict firms' decisions to initiate worker training programs. Market forces -- the demands of product competition -- and companies' relationships with their parent firms (or even their competitors, through trade organizations) are the most important determinants of worker training.

II. Previous Literature

My research builds on the tradition of human capital studies that try to understand more about training in the workplace. One set of research efforts has concentrated on surveys of adults, asking questions about training experiences at work to understand who is likely to receive training. Research findings indicate that the more education you have the more likely you are to receive training, and men are more likely than women to receive training as are whites more likely than minorities. Another set of research efforts has

concentrated on surveying employers about their provision of training in order to illuminate the characteristics of such employers. Studies have shown that large employers are more likely to provide training than small employers. Both approaches offer limited understanding about the role of state incentives in triggering basic skill training to take place within the private sector.

My research focuses exclusively on policy's ability to effect the provision of basic skills by employers. This study builds on two previous studies: 1) Laurie Bassi's (1992, 1994) effort to understand why certain small firms provide workplace education and others do not and 2) Harry Holzer et al's (1993) effort to see if training subsidies in Michigan raise the amount of training firms provide. Bassi's work looks at the provision of workplace education, however, her work does not look closely at the provision of such training in the context of policy. Holzer, on the other hand, does look at the effect of a state-financed incentives on training but not at its effect on the provision of general training, or what this study refers to as workplace education. Thus, my research fills a void between these two previous research efforts by closely examining the relationship between policy incentives and the provision of basic skills.

An individual company's investment in training for working adults is often a risky endeavor, since "training investments require additional short-run outlays that will only be recouped later on if the training actually increases worker skills and the new skills result in cost saving, increased output, or improved quality" (Murnane, Levy, 1994, p.77). Firms report other reasons for not training: they believe that they do not need any training; they do not have the personnel infrastructure to support a workplace education program; they feel they are too busy to deal with a training program, and they

do not know how to arrange for skills to be taught (Bassi, 1994). Parsons (1989) argues that "in the final analysis training is an investment decision" and that training costs must be "offset by the higher future productivity of the trained worker" (p.262).

Becker (1964) makes a distinction between general and specific skills training and suggests that investment in general training is the more risky expenditure for the firm. Whereas specific skills training is particular to a firm and thus less likely to be transferable, general training holds a high risk to the firm because these skills are universally transferable. The added human capital is lost if the worker decides to leave. Because of these risks, Becker argues, that no firm will engage in general skill training. According to Becker, firms are more likely to invest in specific skills which cannot be as easily transferred by the worker. A number of empirical studies support this finding but research by Bassi as well as this study argue that some firms do offer basic skill training with no outside support (Bassi, 1992).

Clearly in the case of either risk--the risk of the worker leaving or the risk of the training making no difference in productivity -- an investment by a firm potentially might have no economic return for the firm. However, as Parsons argues, a long term social gain is achieved by improving the skills of the work force at large. Workplace education has a social product if it enhances a worker's potential productivity and ability to contribute to society at large. Noting the market forces which deter firms from investing in worker development, states have referred to this greater social good in order to justify their investments in worker education. My research seeks to understand if in fact state incentives targeted at employers and not workers are an effective mechanism to begin to assure workers the skills necessary to earn a decent living.

III. Methods

In this section, I discuss my methodological journey in pursuit of understanding which employers are likely to respond to state incentives and where incentives fail to assist workers. I am careful not just to describe the end result, but to document the evolving nature of the study so others might better understand and be able to anticipate the twists and turns of projects dependent on access to both state records and small manufacturing plants.

Target Population

The target population in this study includes what might be considered small businesses within the context of Mississippi. There are 2,617 manufacturing plants in Mississippi. This research focuses on a sample of the Mississippi plants with between 100 and 350 workers as reported in the Mississippi Manufacturers Directory. Nationally, plants with fewer than 500 workers are considered "small business" and fall under the authority of the federal Small Business Authority. In Mississippi, however, a plant with 500 workers is a relatively large plant.

I excluded very small companies -- plants with fewer than 100 workers -- for several reasons: (1) I worried that the smallest plants might not be very stable, experiencing multiple openings and closings; (2) The major state program had set 10 as a minimum number of participants for a training project; and (3) Very few plants with fewer than 100 workers had used the programs. I excluded large companies with over 350 workers because previous research has tended to focus heavily on larger employers and it is well established that the larger the company, the greater the likelihood that it will invest in worker training.

Sampling

Table 1 provides information on the number of manufacturing plants in Mississippi with between 10 and 500 workers that did and did not use the Mississippi's Basic Skills Tax Credit and Skills Enhancement Program.

Table 1: Plants in Mississippi with between 10 and 500 workers that did and did not use state programs.

Plant Size	Plants that used programs # (% of plants)	Plants that did not use programs
10-25 workers	9 plants (1%)	612 plants
26 -50 workers	14 plants (3%)	419 plants
51 -100 workers	21 plants (6%)	315 plants
101-150 workers	29 plants (15%)	161 plants
151-250 workers	29 plants (16%)	157 plants
251-350 workers	13 plants (15%)	74 plants
351-500 workers	8 plants (11%)	67 plants
Total	123 plants (6%)	1805 plants

Neither state program was widely used. Only 123 plants with between 10 and 500 used the Skills Enhancement Program. Only nine plants with between 10 and 500 workers used the Basic Skills Tax Credit. Given the low number of plants that use state programs and my limited resources, I chose not to draw a random sample from all plants in the state. Instead, I constructed two populations: one of plants that had used state programs and one of plants that had not. Plants that train workers using state policy are "cases" in this study and those that do not are "controls."

The case-control method has two distinctive features. First, it proceeds from effect to cause, attempting to identify antecedents that related to the condition of study. Second the case-control method uses a comparison group to support or refute an inference of a causal role for any particular factor. The purpose of such studies is to learn enough about possible causes of the

behavior in question to suggest and support specific hypotheses that can justify further investigation.

I drew a random sample of 52 plants from each group of plants. There were only 77 plants that used state programs, so these plants had a 67.5% chance of being selected. Each of the 424 remaining plants that did not use state programs had a 12% chance of being selected. My sample of 104 plants initially appeared split evenly among users and non-users of state programs. Due to either inaccurate state records or plant manager's lack of clarity about their firm's having programs, the final sample includes 47 plants that report using the state programs and 54 plants having not used the state programs. All plants vary across other dimensions including ownership, products manufactured, and the market where products are sold.

Letters were sent to all the plant managers from the Director of the Mississippi Department of Economic and Community Development. The letter informed the company about the study, and indicated that I would be calling soon. All respondents were informed that the name of the company would not be used. Calls were made over a two-week period in December, 1994. All 104 plants were contacted in this period. A few additional calls were made in the following five week period to reach plants that had been contacted at least five times but where no interview had yet been completed. In all cases, I tried to speak with the plant manager. If he or she was not available, I then tried to speak with the head of human resources. These people were selected because I felt they would be to be well-informed about the plant practices in which I was interested, and would be involved in making a decision to invest in worker training. My response rate of 97% is substantially higher than that of previously published work related to worker training. Only one plant, a locally-owned apparel company, refused to

participate directly. One other plant had gone out of business, and one of the plants selected was a governmental manufacturing plant employing mentally- impaired adults that did not suit the study parameters.

The interview protocol was designed to take approximately fifteen minutes, but many of the interviews were much longer, as the respondent elaborated upon questions. Two survey instruments were developed, one for the plants that had used state programs and one for those that had not. The survey instruments were tested with plant managers that would not be surveyed to assure that the questions were clear. I tried to assure that questions were consistent across the two surveys. The first section asked questions related to the respondent's knowledge and use of state programs. The second section asked questions related to basic firm information. The third section asked more detailed questions about the production workers. The fourth section asked more detailed questions about the plant operation itself and the fifth section explored managerial beliefs.

All survey responses as well as informal side conversations were quickly recorded by hand and transcribed within a few hours. No actual recording device was used, so comments reflect my own attempt to capture interview side remarks.

Selection of Plants for Case Studies

The survey data was analyzed to identify areas for further exploration and select the plants to visit for the case studies. My initial plan was to conduct paired case studies identifying plants that were similar but reacted in different ways to state programs. Different criteria for the selection and pairing of the cases that were initially considered included: 1) Standard Industrial Codes (SIC) , 2) Geographic Clusters, 3) Relationship to Parent Companies and 4) Networking Clusters. However, other issues emerged that

were also important to consider. Some of the plants are public, some private. Some are locally owned and some are part of large multi-national corporations. Another possibility involved focusing exclusively on a given group of plants in the same town.

In the end, I decided to adopt a hybrid approach and selected plants in two different towns. This would allow me to look at the community context surrounding training and also consider the local community college which in theory offers all plants the same services in the same manner. The town approach would allow me to pursue questions about local networking and community infrastructure around workplace education. The intention was to select two towns where the paired plants would represent both locally owned plants as well as branch plants. In looking to select the plants, I considered the type of industry, whether it was a publicly or privately owned company, and whether it was locally-owned or a branch plant of a national company.

The challenge with this sampling strategy is that it required both plants in a pair to grant me access. Repeating the approach used for the phone survey, the Director of the Office of Economic and Community Development sent letters to the plants selected, informing them of the details of the second phase of the study -- including anonymity -- and that I would be calling.[2] When I called the four firms, two in each town, one plant in each community denied me access. In the town of Maple Wood, another plant from the phone survey, which I contacted directly with no correspondence from the state, subsequently granted me access. I then directly contacted two plants in

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[2] The Mississippi Department of Economic and Community Development supported this research project. The State paid for all expenses associated with the phone survey and field work. In return the state was provided with a report outlining the major findings from this research.

another town, Cody, again without any letter from the state, and was granted access to both.

I decided to call two additional plants, both locally owned and located in the same industrial park. These additional plants, in Muddy River, were chosen for three reasons: 1) I wanted additional locally owned plants; 2) one of the plants had been mentioned to me over and over again as the best example of a local plant that was committed to training through involvement in state programs; and 3) Muddy River provided an opportunity to explore the relationship between two plants literally located next to each other.

I also decided to call one additional locally owned plant, Sir John's, that did not use policy as a counterpart to the plant in the first town where the paired plant had refused access. The company that had denied access was a locally owned apparel plant, as was Sir John's. Again, I contacted the owner directly and access was permitted. The final case study sample consisted of eight plants in 5 towns.

My visits to these eight plants entailed an interview with the plant manager, the human resource manager (where there was one), at least one supervisor, and at least one front line worker. In most cases, I spent between one and two days at the plant. In each case, I had a tour of the facility and remained in the production area observing work practices and talking to production workers and supervisors. All interviews were taped, unless noise in the background prevented it, and later transcribed. Extensive field notes were also taken each day, with longer narratives composed each evening after a visit. Here, I have chosen to present four of the cases that emerged as particularly illustrative of the internal and external features that largely determine responsiveness to state-supported worker training.

IV. Findings

Clear Need for Workplace Education

Many adults in Mississippi lack basic skills. The majority of workers in both plants that used state programs and those that did not, lacked basic skills. In plants that have used state programs, 87% reported having workers who lacked basic skills, whereas in the plants that did not use state programs, only 66% reported having workers that lacked basic skills.

A large proportion of plants, 70%, did not provide workplace education without state assistance. Although conventional wisdom has suggested that few plants will provide any workplace education in the face of the risk that workers will take their newly acquired skills to other employers, this study confirms Bassi's (1992), and others' (Gordon, 1990) , findings that a small percentage of plants do provide such basic skill training. Twenty percent of the plants surveyed that did not use state programs provided workplace education, and among the plants that used state programs, 40% percent reported providing some form of workplace education prior to using the state program. The lack of workplace education, even when state support is available, is only problematic for individual firms if these employers report having serious skill deficiencies among current workers -- returning us to the question of need.

Over half (55%) of all respondents believed that all workers need to be proficient in basic skills. In responding to whether all workers needed to have basic skills to perform the jobs they do, there was no significant difference between the plants that used state programs and those that did not. Some respondents were very blunt in describing jobs that required little skill that had not changed and would be unlikely to change in the near future. As

one manager from a garment plant commented, "This is a cut and sew operation ... People cannot read or write, but they can sew."

Internal Differences Between Plants Responding to State Incentives as Compared to Those Not Responding

There were significant differences between the two groups of plants in their response to whether there had been an increase in demand for workers with basic skills. Plants that used state policy overwhelmingly (91%) reported such an increase, whereas only 47% of the non-users reported an increase. Still, even with this increasing need for skilled workers, more than half the plants did not require a high school diploma for entry level jobs. But those plants that used state programs were much more likely to have the requirement (47% compared to 7%). These differences in the importance of skills are in-part related to the demands placed on workers by the internal operation of the plants in which they work. Depending on how and what technologies are used, how much attention is given to quality, and how work is organized, different skills are demanded.

Plants that used state programs were more likely to report an increase in skill demands, and attribute the change to new technology, changes in workplace organization or increased quality standards. For example 93% of the plants that used state programs attributed the increase in demand for skills to new technology compared with 80% among plants that did not use state programs but still reported an increase in skill demands. One statistically significant difference is that the plants that used state programs were much more likely to respond that the demand for new skills was due to a change in workplace organization (74% vs. 40%). This might suggest that changes in the internal workplace organization require a different degree of

skill and might also explain the greater frequency with which plants experiencing change responded to state incentives.

Plants that used state programs were more likely to use more advanced technology, more likely to have workers directly involved with monitoring their own work, and more likely to have workers organized in production or quality teams. The introduction of new equipment, or reorganization of work, can require new skills of workers. Plants that used state programs were more likely to use sophisticated technology like Computer Aided Design (60% vs. 33%) or Computer Numerically Controlled Machines (64% vs. 44%). The majority of plants that used state programs reported using work teams, whereas less than half of the plants sampled that did not use state programs reported using work teams (77% vs. 46%).

Among plants that used state programs, 81% used Statistical Process Control (SPC) compared to 31% of plants that did not use state programs. A decision to implement SPC can often be the first awakening of management to serious skill deficiencies among workers. Statistical Process Control requires workers to be able to perform basic math calculations and graph the results.

The workers in plants that used state programs on average received better benefits and wages than those workers in plants that did not use the state programs. Although both groups of plants offered health insurance and paid vacations at about the same rate, plants that used state programs differed significantly from those that did not use state policy in the offering of pension plans, paid sick leave, and dental insurance. Plants that used state programs were also more likely to have a worker suggestion program, an employee of the month, or a profit gain sharing program.

There were also significant differences in the entry level and average wages workers received in the plants that used state programs as compared to those that did not. Among plants that did not use state programs the average entry level wage was $5.66 whereas in plants that used state programs the average entry level wage was $6.86. The average worker's wage differential between the two groups was also greater than $1.00 an hour ($7.67 vs. $8.82). The difference narrowed for workers earning the top hourly wage with no significant difference ($11.00 vs. $11.52).

Plants that did not use state programs were poorly informed about what resources were available. Of the plants that used state programs, all were aware that some programs existed, but only 56% knew of the tax credit program. However, among plants that did not use the state programs, only 30% had any awareness of the state programs. Lack of knowledge was clearly a factor contributing to why these plants might not have used state programs, and differences in the plants themselves might explain why some plants were less likely to be informed.

Differences in External Pressures that Influenced Responses to State Incentives

In examining the survey findings, plants that used the state programs reported facing greater external pressure. Ninety-eight percent of the respondents from plants that used state programs reported that an increased emphasis on quality led them to seek out state assistance or respond to state incentives. Quality refers not just to the end product, but also to the process used in making the product, as often work is reorganized specifically to enhance quality. These plants were also likely to report increased competition (91%) and introduction of new technology (89%) as reasons for using the state programs.

Respondents in plants that did not use state programs conveyed a different perspective. In some cases, the essence of the comments suggested that skilled workers were not needed and in other cases that the company simply did not know that resources were available. Regardless of whether the plants used the policies or not, the respondents were overwhelmingly supportive of the state offering services. Again and again, responses suggested that the state has an obligation to supplement the poor skills workers have as the result of a deficient education system.

Plants that used state programs were more likely to express that an outside pressure lead them to implement one or more of the internal operations. Among the plants that used state programs, the impetus for change in the internal operation often came from external market forces. Among the users, 55% reported instituting an internal practice in response to customer requirements, whereas only 30% of non-users reported having such customer requirements. For example, local management that implements Statistical Process Control might do so not of its own volition, but due to a customer demand.

Users of the state programs also expressed greater pressure from suppliers to use a particular practice than non users (30% vs. 9 %). Many of the respondents that used state programs also reported pressures from the parent company or outside owners to implement a change in technology or workplace organization. For example, one respondent commented, "We are part of a Fortune 100 company ... they tell us to do a quality program."

Twenty-six of the plants that invested in workplace education mentioned the importance of meeting quality standards established by the International Organization for Standardization (ISO) to satisfy either a

customer or demand from a parent company.[3] A few of the plants that used ISO 9000 were responding to requirements from outside parent companies anticipating the changes that the market would demand. These parent companies provided both leadership and resources not available to many of the locally owned plants which are more likely not to have used state programs. The plants mentioning ISO 9000 implied that the process increases the need for skilled workers. As one manager described the effect: "Working on ISO 9000 means more intense tracking and more intense record keeping ... workers have to be more consistent in the work they do."

The plants that did not use any state programs and provided no workplace education did not experience outside pressures that required such change, but instead often felt constrained by external pressures. For example, one respondent commented, " I would love to train workers. I would like people to better themselves even if it is not necessary for our plant, but the parent company is backwards on training. ... When I bring it up I get a 'why do you need it' attitude." Interestingly, 50% of the plants that did not use state programs were locally owned -- as compared to only 18% of those that used state programs -- suggesting that some plants that did not use state programs might have experienced less pressure from broader markets or outside ownership or management. Similarly, they might have received fewer resources to help them make possible changes to stay competitive in the market place.

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[3]ISO, head quartered in Geneva Switzerland, is an organization of management and quality control experts from over 90 countries working to establish quality standards for businesses to follow. In 1987, ISO began to develop standards that are designed to help companies set up systems to provide quality assurance and control. Certification requires a plant to clearly define and document the procedures used in every phae of production.

Plants that were active in networks --relationships with other companies -- were more likely to be involved in using state programs. Plants that used programs were more aware of other plants that used state programs (66% vs. 22%) and could often identify these other plants by name. They were also much more likely to have visited another plant to observe the training (36% vs. 6%). Moreover, plants that used the state programs were more likely to meet regularly with plant managers from other companies (81% vs. 54%). The networks varied from local luncheon meetings organized through the chamber, to more specific industry specific networks covering a broader geographical region. One manager described a local network saying, "I meet monthly with managers in my area as part of the mid south management group. We tour different plants, pick up a lot from doing that ... we go from place to place, round robin, and see what is new each time we go back. Sometimes we visit others not in our group." Other respondents described more informal monthly meetings or luncheons.

The plants that operated as a branch plant of a parent company also mentioned company wide networks. The local manager in Mississippi often participated in monthly or quarterly meetings with other branch plant managers and the corporate leadership. Similarly, lower level managers were also in company wide networks with their peers. For example, the human resource manager in a Fortune 100 company is likely to attend meetings with other human resource managers from other branch plants in the company. These different relationships act as avenues for local management and staff in one plant to learn about new ideas and observe practices from other plants that ultimately might influence the internal operation of their plant.

The descriptive statistics presented in this section contribute to understanding some of the differences that exist, but they leave certain

questions unanswered, as such information provides only a schematic view. In the next section, I present four cases to further an understanding of the internal operations as well as external factors that potentially affect each plant's outlook toward investment in workplace education.

In-Depth Case Studies of 4 Firms

Policy makers assume that the plants across the state are sleeping beauties that only need a kiss to be woken up. The state designed the Basic Skills Tax Credit and the Skills Enhancement Program with an assumption that all plants with workers with low skills will want to use these programs. Yet, as I've noted the goals of the policy did not coincide with those of all plant managers; basic skills are not important to all plant managers. Certainly, there is no one right kiss that will result in a universal awakening. While it is possible that policy might have a greater impact were policy makers to consider the implementing environment, unless they take note of plants' internal and external demands, the current programs will continue to have only modest influence.

The cases illustrate that each plant is different in its internal operation, both in the organization of work and the demand level for skills to perform the work, and in the external forces each experiences. The nature of the internal operation and the external environment shape a plant's decisions regarding an investment in worker training or the use of a state program. Often policy makers neglect these issues, assuming they can control the organizational or technological processes necessary for implementation.

The cases demonstrate that not all employers embrace the beliefs behind the state policy. Adult education might be an important and valid state goal, but it is not a goal that all plants will find necessary to the operation of a business. Plants do not all operate with the same pressures, but rather

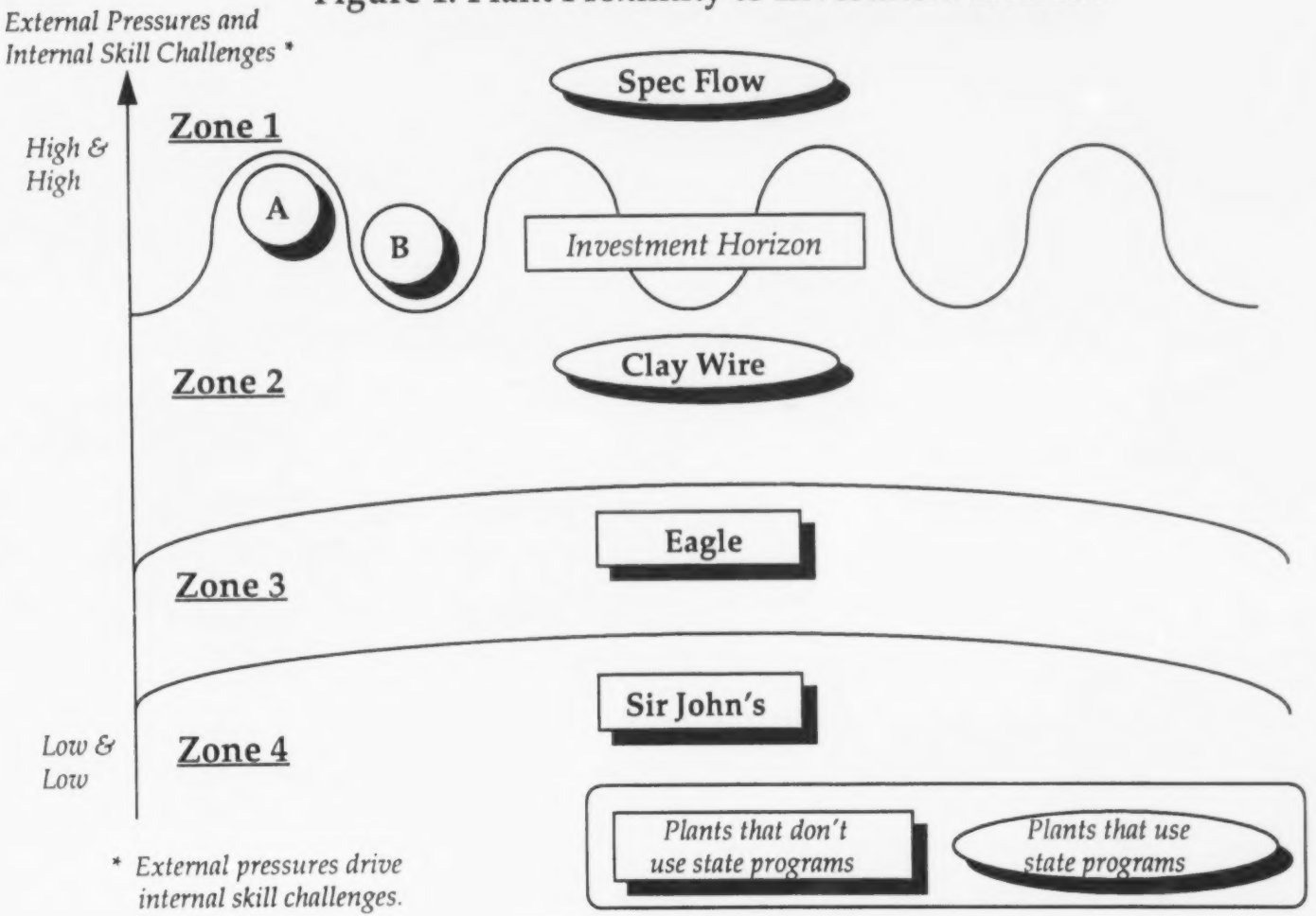
face very different situations based in part, on the internal management and in part, on the context in which the plant operates.

Figure 1 illustrates the level of external pressures and internal skill challenges that the four plants face. Plants that do not need workers with basic skills or have not thought about moving away from a Tayloristic mode of work have the fewest internal skill demands. Plants that experience external pressures from customers, competition, or owners to introduce new production techniques or organize work differently are considered to have high external demands. In such situations, the external demands most likely affect the internal skill challenges.

The investment horizon in Figure 1 represents the actual choices plants make regarding an investment in workplace education. Those plants in Zone 1, above the horizon line, provided workplace education without the support of the state or prior to using state programs. Plants in Zone 1 are likely to try to use state programs as a substitute for their own training dollars.

Spec Flow, a manufacturer of graphite golf shafts, is an example of a branch plant that invests in workplace education. Its customers and parent company have high expectations. The internal attention to quality requires workers with basic skills. The company invested in worker education prior to using the state programs, and most likely would have continued doing so without state support. Other plants that might occupy this zone either provide workplace education without state support, or do not provide any workplace education because workers already are in basic skills. Although plants in this area have used state programs, these plants are not the intended beneficiaries of policies. One of the serious challenges of policy makers is to identify and target plants below the investment horizon.

Figure 1: Plant Proximity to Investment Horizon



The horizon is represented by a wave rather than a solid line to depict a scenario wherein a plant might actually experience greater external and internal demands than a plant that does provide workplace education, but which nonetheless does not invest in workplace education because of market failure. Plants below the wave might face greater pressure than plants above the wave horizon. Thus, in Figure 1, Plant A does not provide workplace education even though it experiences greater external and internal challenges than Plant B which does provide workplace education.

Clay Wire, Eagle, and Sir John's are all examples of plants that did not invest in workplace education prior to the advent of state support. They are positioned differently relative to the decision to invest in workplace education based on their individual internal demands to increasing the skills of their workers. The internal demands, in most cases, are functions of external factors that trigger a need for change. I depict these differences symbolically by placing each of the representative plants in three different zones beneath the investment horizon. It is these plans below the horizon that are the intended focus of Mississippi state policy.

Zone 2, the zone closest to the horizon, includes those plants that face both high internal challenges and external pressures. Out of the three zones, the plants in Zone 2 are the easiest to reach and most likely to use state programs. These plants are the most eager to take advantage of state incentives because they recognize that a problem exists. For example, their workers can't operate a new machine or use Statistical Process Control. Firms in Zone 2 have an immediate need and a desire to change, but lack resources to invest in workplace education. These firms may even approach the state for assistance before being approached. Clay Wire, a manufacturer of wire used primarily in tires, is an example of a single-plant operation that needed

the resources provided by the state to survive and meet its customers' demands. The president has the desire to change, but lacked the resources to develop a workplace education program. Clay Wire faces the same if not greater external pressures as Spec Flow to produce a quality product, but lacks the resources to support the changes required.

Zone 3 is further from the horizon, but the plants that occupy this zone also face internal challenges related to deficiencies in worker skills. Plants in this zone are typically under local ownership and have often not faced as great external pressure to change as those in Zone 1 or 2 and thus do not aggressively seek out assistance. This zone is comprised of a group of plants that policy has not reached, but that are rising toward the horizon. I use Eagle, a manufacturer of auto and truck wreckers and armored vehicles, as an example of a plant that expresses a desire to train and change, but has taken no action to provide workplace education to its workers. Although Eagle would most likely benefit from the training of its workers and thinking more critically about the organization of work and quality issues, current state programs have been ineffective with respect to this plant. However, Eagle is an example of a plant that might possibly be enhanced and strengthened if the policies were designed differently. Although Eagle is currently beyond the reach of policy, it sits on the edge of the zone of influence. Managers in plants like Eagle are not likely to seek out any assistance and not likely to be persuaded to invest in workplace education as a result of a visit by a workforce specialist from the state. Thus, current policy is unlikely to impact the plants in this zone.

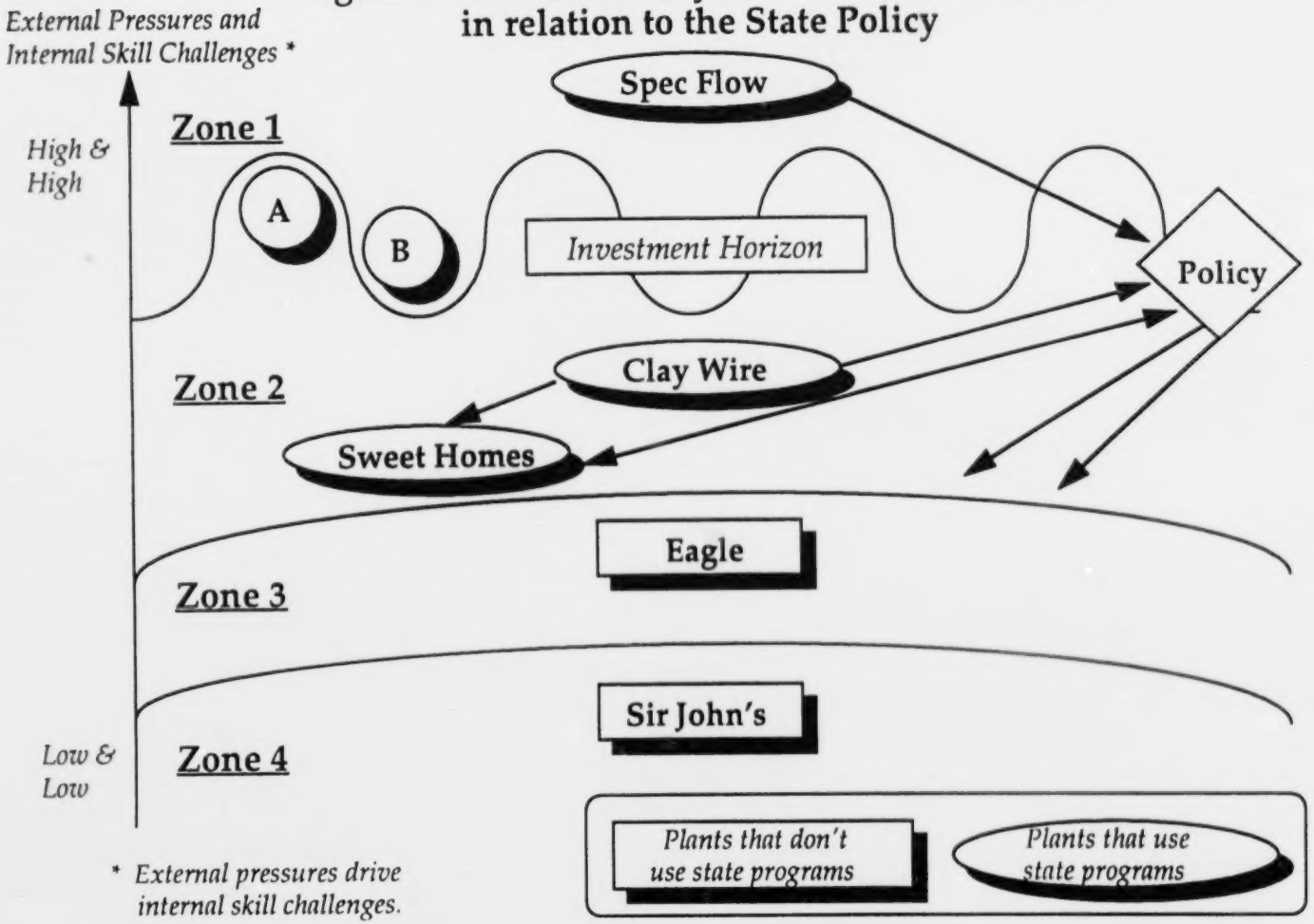
The zone furthest from the horizon, Zone 4, is made up of those plants that face few internal or external pressures to motivate them to demand greater skills of workers. The immediate need to provide workplace

education for these plants is far off on the horizon. Some plants in this zone remain out of the reach of not only the Mississippi policies, but, in all likelihood, most policy efforts. Sir John's, a cutting and sewing operation that makes jeans and shirts, is an example of a plant that does face external demands, but all demands work against an increase in skills for workers. Workers at Sir John's do not really need high skills. The jobs are very low skilled and low-wage. The state has lost 7,400 of these jobs in the last two years. It is unlikely that policy as it is currently designed will protect these positions from moving off-shore.

Figure 2 introduces state policies and depicts the impact of state programs in firms' investment in workplace education. Spec Flow uses the policy as does Clay Wire. Both plants approached the state for assistance (as shown by arrows directed towards state policy). The policy box, representing state programs, rests on the investment horizon since the articulated aim of the policy is to provide incentives to encourage workplace education. Although policy makers intended to reach Eagle and Sir John's through the state incentives, neither plant has responded.

In some situations, plants discover, and are persuaded to use, the state programs by other plant managers. Figure 2 also illustrates how these peer to peer relationships can function. The president of Clay Wire approached the owner of Sweet Homes about his experience using the state programs. Clay Wires' president is deeply committed to helping workers, and encouraging others to follow his leadership and respond to state programs to invest in workplace education. In these efforts, he faces the same challenge the state faces. Some plants are reached, such as Sweet Homes, but many more remain satisfied with their internal operation face few external pressures to change,

Figure 2: Plant Proximity to Investment Horizon in relation to the State Policy



and are unlikely to be persuaded by either state incentives or the urging of other firms.

State incentives, the product of public policy, are but one external feature that can influence company behavior. For certain plants under certain conditions, providing workplace education is a valid pursuit. Some plants will not need assistance; others will fail to engage in the needed workplace education because of other market forces. Policy designed at reaching plants that need to upgrade the workforce but lack the resources has the greatest potential for success.

These findings have considerable policy implications. By shifting the way in which we understand a company's decision to begin worker training, I submit that state policy needs to re-focus its attention. I do not dismiss the importance of state intervention, but rather argue that the state should focus its attention on the external features: the structure of product competition and company-company relations.

V. Conclusion

Policy makers often work from the assumptions that workers with poor skills should have an opportunity to improve their learning, and that investing in workplace education pays off for all parties. There may be benefits for the worker who can use new skills and earn a higher wage. Upgrading worker skills might heighten civic engagement and contribute to a more literate electorate. An employer who knows how to make use of these skills might also benefit. However, training workers in a company that does not know how to tap the new skills will not necessarily bring any improvement to either the worker or the plant. Such an investment of time and financial resources, by a plant or a state, does nothing to ensure that a

workplace will change to become more profitable or the earnings of workers in that facility will rise.

Differing internal plant operations as well as certain external features appear in this study as two critical dimensions that distinguish plants that invested in state-assisted workplace education programs from those that did not. Plants that used state programs, compared to those that did not, appear to be different across both internal and external features. They differed in their awareness of state resources. They differed in what skills they required of workers and how they selected workers. Workers in plants that used state programs, on average, earned higher wages and received better benefits. Plants that used state programs were more likely to use more sophisticated equipment and follow high-involvement work practices demanding that workers give attention to quality. Most often, these internal requirements were demanded by a parent company or customers. And finally, plants that used state programs were more likely to be engaged in formal and informal networks where they came into contact with other plants. Previous research that examined differences between firms providing workplace education and those that do not suggested that, "within matched sets of firms, the firms with and without programs appear quite similar" (Bassi, 1994). My findings from the phone survey are the first to discover important differences between plants that do and do not use state programs to invest in workplace education.

The phone survey and the case studies suggest that internal changes often follow from external conditions. For example, a parent company requiring a quality program usually triggered local management to begin a new program, changing internal operating procedures. A customer's requirement that statistical process control be used and made available for

audits triggered the implementation of a new program. A competitor who began to use faster and more efficient technology left a plant in Mississippi at a disadvantage unless it too was able to respond to changing technologies. The plants that expressed a greater demand for skilled workers were the plants that also had greater external pressures. Involvement in local networks or the ongoing relationship with a parent company could also influence the knowledge and awareness of work practices that might require greater skills.

The two Mississippi programs have been important in helping some industries make necessary changes. Certainly some plants have benefited from the two state programs examined in this study -- The Skills Enhancement (SEP) Program and the Basic Skills Tax Credit (BSTC). The SEP is useful to plants that recognize a need for increasing the skills among workers, but might not understand the specific training needs of their workers or know how to construct an effective workplace education program. Such plants often welcome assistance from a workforce development specialist because they see the need, but lack the internal resources, to respond. In such cases, the SEP has helped plants face stiff competition and respond to external pressures to change.

Other companies that do recognize their needs, and even have the resources to respond internally, have been able to use state resources, such as the Basic Skills Tax Credit, to subsidize financial costs that would have been incurred without any state assistance. Consequently, the state use of Basic Skills Tax Credit is a misdirected incentive. The tax credit has helped only a handful of companies by offering a subsidy for training that likely would have been done anyway. So, the state was, in effect, forfeiting tax revenue that might have been better used elsewhere. Similarly, some of the plants

that used the services provided by the Skills Enhancement Program provided training prior to participation in the program and would probably have continued to do so even without state assistance. Such a use of limited state resources is neither efficient nor strategic.

There is little evidence to suggest that either state program triggered essential internal changes in the plants under study. The plants experiencing internal turmoil, or that were already training, were the ones most receptive to the state incentives. Thus, the programs acted less as incentives to change, and more as resources to help plants implement changes already recognized as necessary or as a source to subsidize private expenditures with public funds in plants already engaged in workplace training. This study supports Osterman and Batt's (1993) assertion that just because there is "a correlation between investment in the labor force and use of transformed production systems, ... it does not follow that an increment of additional training will shift firm decisions about how to organize production" (p. 468).

Many plants lack the external pressure or internal disposition to recognize benefits that might come from instituting a workplace education program. In such situations, management sees no need to increase the skills of workers. In many manufacturing settings not all adult workers need more than the most basic skills to adequately perform the jobs they currently hold. For example, if Sir John provided workplace education while making no other changes, the firm would be unlikely to reap any benefits. In fact, the plant would likely lose workers to other employers who might pay a higher wage. Since policy makers cannot mandate new technology or new modes of management that might require higher skills across all plants, the overall effect of these policies will be modest.

In Mississippi some plants have changed dramatically and become high performing work organizations where workers are expected to work in teams, understand multiple jobs, and solve the problems encountered in the daily production process. Other plants -- by far the vast majority -- continue to operate as they always have, with little or no need for workers with basic skills.

The findings from Mississippi echo findings from national surveys. For example, a national survey of 875 firms with 50 or more employees discovered that only 37% had a majority of front line workers engaged in two or more high performance work practices such as job rotation, self-directed work teams, problem solving/quality circles, or total quality management (Osterman, 1994). If one were to look at the same data but require that a high performing work organization use three of the four concepts, only 13% of the firms sampled would qualify as high-performance work organizations (Teixeira and Mishel, 1993). Such findings have lead other researchers to ask questions like, "Whose Skills Shortage -- Workers or Management?" (Teixeira and Mishel, 1993). My work suggests that it is questionable if workplace education will pay off for the employer or employee in all work settings.

Much of the current effort in Mississippi and other states focuses on offering incentives to plants to invest in worker education while ignoring other problems of management and work organization. In certain situations, local management lacks the capacity to respond to state incentives. In these instances, it might be more productive for policy makers to ask, not, how might we improve basic skills in the workforce but how might we change management practice to value improved worker skills? Currently

disincentives often outweigh the incentives. A manager may might not see a need for additional skill training and fear worker mobility or dissatisfaction.

With no government action, adult workers with poor skills will continue to face declining wages, and employers who fail to change will likely find it more and more difficult to compete in international markets. Although many jobs might not require workers with higher skills, the wages workers earn are very dependent upon both their level of education and the skills they hold. Whereas a high school graduate twenty years ago could have found a job with a wage that would support a family, that is much less true today. This change warrants concern by the policy community about the large number of employees and employers who might not perform to their potential, and might subsequently minimize the use and value of labor. However, training itself is "no panacea to low and falling wages" (Freeman, 1994, p.234). Other policies such as the Earned Tax Income Tax Credit and raising the minimum wage will be necessary to counter the trend of falling wages.

It is possible that some plants did not use the state programs because they did not know about their availability. One might posit that there are some plants that would like to support workplace education, but lack the internal resources and remain ignorant about the state resources. All but two of the plants in the study support the state role in assisting companies and many expressed a desire to know more about what was available to them. Basic skills are becoming more and more important among the plants in this study, especially as reported by the plants that use state programs. As a result of some of my interviews, which in essence educated the respondents about state programs, a few plant managers implied that they would follow-up by contacting the state. However, effective publicity for state services is unlikely

to create a tidal wave of demand. Where there is no recognizable need, it is hard to imagine why and how a plant manager would have the will to respond to state initiatives. Policy, by focusing almost exclusively on training workers with low skills, has narrowly defined the crux of the problem as skills among workers.

Although employers often speak of skill demands, in most cases it is not educational skills that are important. Often, it is social skills such as a worker's attitude or work ethic that matter most to employers. This theme is echoed across national reports. For example, one glaring irony in the 1990 National Center on Education and the Economy's Commission on Skills of the American Workplace is that the report calls for increasing the skills of workers, while at the same time reporting that only 5% of employers surveyed emphasized a growing need for workers with greater educational skills.

Simply enhancing the salesmanship of the state about its SEP and BSTC programs might increase the usage of the state programs, but will not assure that the employers have in fact been helped to be more competitive, or that the worker with new skills is able to earn a higher wage in the current work site. When it comes to training workers, there is a "build and they will come" undercurrent within the policy community -- if we train working adults, then employers will use the skills and be more productive. There is little evidence to support such logic. Few plants reported training in anticipation of change, but rather only began workplace education after change -- in the form of external pressures -- arrived.

The success of any state program depends on local capacity and the motivation of local management (McLaughlin, 1987, p. 172). Where motivation and capacity exist, state incentives will be used to subsidize local

efforts. Where there is will, but no capacity, programs such as the Skills Enhancement Program are useful, if employers know about them. Where there is little or no motivation, it is unlikely that either a tax credit or a capacity-assisting program like the SEP will make much difference. The motivation often comes from external conditions that demand change; policy rarely acts as one of the more powerful external conditions.

Although the programs examined in this study have only limited value, other programs not studied offer alternative possibilities. Thus, the following remarks are speculative in nature. This study finds that managers engaged in relationships with other managers in other firms are more likely to be involved in training. Although this does not guarantee that participation in networks by those less inclined to such activity will trigger an increment of additional training, self-help networks in Europe have been successful in increasing the quality and productivity of small firms (Levine, 1995, p.133). In Germany there is a government sponsored effort to assist small firms through a system of training consortia (Kochan and Osterman, 1991, p.38). Osterman and Batt (1993) also suggest that employer "associations or collaborative firm networks have the potential to serve as effective intermediaries between the state and employers, particularly small ones, both to expand training and to accomplish other important human resource objectives" (p. 466). Such networks also become entities that can outlive the life of any one state or federal program. Any one program can act as "an institution-building impact that survives the project itself" (p. 466).

If policy is interested in building the capacity of managers to think in new ways about the use of technology and labor, then policy should find mechanisms to support activities that foster learning relationships between managers. Peer-to-peer relationships can best model new behaviors. More

connected plants, either in collaboration with suppliers, customers or other plants, are also more likely to embrace high-performance work practices (Helper and Levine, 1994). When firms form links, "they increase their opportunities to acquire information, resources, expertise, advanced technologies and knowledge" (Bosworth and Rosenfeld, 1992, p. 2). As Osterman and Batt (1993) argue, "the most compelling reason for system building is that the training problem is too big for a project-based approach to have much impact. There are too many firms relative to any conceivable level of public funding. Instead, scarce funds should be expended to build institutions that outlive a particular project" (p.464).

Many organizations already provide a forum where managers talk to other managers. There are local industrial councils, state manufacturing associations, and often more specific industry organizations. Participation in such organizations is usually voluntary. Some communities have stronger organizations than others, and some industries have stronger member organizations than others. Where weak networks exist, government resources should be available to strengthen the network. Where there are no organizations, government should try to facilitate the formation of an appropriate group or association. Government resources should work with the existing leadership of networks, while also working to promote greater participation.

In working with individual plants, representatives of the state can encourage participation in existing networks. Government resources might supplement the cost involved with network activities. For example, the state might organize and finance a study tour for managers from apparel plants like Sir John's to visit other apparel plants that operate differently. Levine (1995) suggests that government subsidize groups that organize tours to

model plants to spur grater interest high-quality employee involvement programs (p.131).

A conference sponsored by the Aspen Institute devoted its attention to the importance of what it called "significant others." The Aspen report mentions, "The power in the potential of networks lies in their ability to transform, through peer example and influence, the values beliefs and behaviors of the people -- owner, manager, and workers -- within firms" (Bosworth and Rosenfeld, 1992, p. 44). Networks are more likely to change the will of a manager than is a quick visit from a workforce development specialist. The owner of Eagle is not averse to change, but the quick visit from the state did not help.

After spending two days with virtually all of the management team at Eagle, they welcomed and solicited my observations. They wanted a critical friend. I was certainly not an expert in towing, but after listening to workers and managers and observing workplace practices, I could make observations that led to a serious conversation about the organization of work and use of labor. This conversation needs to be ongoing. Ideally, the human resource manager should meet with other human resource managers, the plant manager with other plant managers, and even supervisors with other supervisors. In large multinational corporations with multiple plants, these meetings and relationships are often ongoing. Local and national associations can provide a similar function for plants that are not part of ongoing support networks.

This study suggests that the Mississippi strategy has not been the most effective policy mix. The state can continue to provide support and assistance to plants such as Clay Wire, but there are not enough plants like Clay Wire to make such a program an effective strategy to improve productivity of plants

or increase earnings of low-skill, low-waged workers. Better publicity might help attract some additional plants, but for any large-scale impact, policy needs to increase the demand for skilled workers among employers by supporting managerial learning to accompany organizational and technological change. Policy makers can facilitate managers' access to best-practice ideas by supporting formal and informal networks.

Policy makers should also consider by-passing the employer and targeting adult workers directly, giving them skills that might provide them with better choices regarding employment. Current polices for existing workers focus almost exclusively on the firm. "Other countries rely more heavily on governmental training programs, or on school-based or individual training decisions" (Freeman, 1993, p. 225). Such a shift would support personal competitiveness by encouraging workers to obtain those skills and education necessary to secure a higher paying job. By supporting individual learning, labor might be strengthened.

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